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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/164,898 | 10/01/1998 | JAMES AKIYAMA | 42390.P3373 | 7208 |
| 7590 | 01/14/2004 | | EXAMINER | |
| JAMES H SALTER BLAKELY SOKOLOFF TAYLOR & ZAFMAN 12400 WILSHIRE BOULEVARD 7TH FLOOR LOS ANGELES, CA 90025 | | | VITAL, PIERRE M | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 2188 | |
| DATE MAILED: 01/14/2004 | | | | |

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Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|------------------------|---------------------|--|
| Office Action Summary | Application No. | Applicant(s) | |
| | 09/164,898 | AKIYAMA, JAMES | |
| | Examiner | Art Unit | |
| | Pierre M. Vital | 2188 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 28 November 2003.

2a) This action is FINAL. 2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 19-37 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) Claim(s) _____ is/are allowed.

6) Claim(s) 19-37 is/are rejected.

7) Claim(s) _____ is/are objected to.

8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on 08 September 2000 is/are: a) accepted or b) objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All b) Some * c) None of:

1. Certified copies of the priority documents have been received.

2. Certified copies of the priority documents have been received in Application No. _____.

3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

13) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

a) The translation of the foreign language provisional application has been received.

14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

1) Notice of References Cited (PTO-892)

2) Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____

4) Interview Summary (PTO-413) Paper No(s). _____

5) Notice of Informal Patent Application (PTO-152)

6) Other: _____

DETAILED ACTION

Response to Amendment

1. This Office Action is in response to applicant's communication filed November 28, 2003 in response to PTO Office Action mailed October 17, 2003. The Applicant's remarks and amendments to the claims and/or the specification were considered with the results that follow.

2. Claims 19-37 have been presented for examination in this application. In response to the last Office Action, no claims have been amended. No claims have been canceled or added. As a result, claims 19-37 are now pending in this application.

3. The rejection of claims 19-37 as in the Office Action mailed October 17, 2003 (Paper No. 33) is respectfully maintained and reiterated below for Applicant's convenience.

Declaration

4. The declaration filed on November 28, 2003 under 37 CFR 1.131 has been considered but is ineffective to overcome the Thompson et al (US 6,341,342) and Klein (US6,567,864) references.

The evidence submitted is insufficient to establish a conception of the invention prior to the effective date of the reference. While conception is the mental part of the inventive act, it must be capable of proof, such as by demonstrative evidence or by a

complete disclosure to another. Conception is more than a vague idea of how to solve a problem. The requisite means themselves and their interaction must also be comprehended. See *Mergenthaler v. Scudder*, 1897 C.D. 724, 81 O.G. 1417 (D.C. Cir. 1897). Each exhibit relied upon should be specifically referred to in the affidavit or declaration, in terms of what it is relied upon to show. Applicant must give a clear explanation of the exhibits pointing out exactly what facts are established and relied on by Applicant (see MPEP § 715.07).

The affidavit or declaration and exhibits must clearly explain which facts or data applicant is relying on to show completion of his or her invention prior to the particular date. General statements in broad terms about what the exhibits describe along with a general assertion that the exhibits describe a reduction to practice "amounts essentially to mere pleading, unsupported by proof or a showing of facts" and, thus, does not satisfy the requirements of 37 CFR 1.131(b). *In re Borkowski*, 505 F.2d 713, 184 USPQ 29 (CCPA 1974). Applicant must give a clear explanation of the exhibits pointing out exactly what facts are established and relied on by applicant. 505 F.2d at 718-19, 184 USPQ at 33. See also *In re Harry*, 333 F.2d 920, 142 USPQ 164 (CCPA 1964) (Affidavit "asserts that facts exist but does not tell what they are or when they occurred").

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 19, 21, 25-26, 28, 30 and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Klein (US6,567,864) and Jones et al. (US5,619,723) and further in view of Thompson et al (US6,341,342).

As per claims 19, 25, 28 and 35, Klein discloses a system comprising: a Basic Input/Output System (BIOS) [*ROM BIOS 70*; Fig. 1; col. 3, lines 52-59]; a system bus coupled to said BIOS [*ROM BIOS 70 coupled to I/O bus 62*; Fig. 1; col. 3, lines 52-54]; an integrated drive electronics (IDE) interface coupled to a system bus that communicates directly with said BIOS via said system bus [*BIOS 70 cause the microprocessor 50 to initiate a DMA transfer from each of the IDE devices 66-68*; Fig. 1; col. 4, 50-53].

However, Klein fails to specifically teach a striping controller coupled to said IDE interface; a first disk drive including first IDE electronics, said striping controller coupled to said first IDE electronics; and, a second disk drive including second IDE electronics, said striping controller coupled to said second IDE electronics, a striping controller connected between said first and second disk drives and said interface, said striping controller causing data being communicated between said system bus and said first and second drives to be substantially read or written in parallel.

Thompson discloses a striping controller coupled to said IDE interface [Fig. 1B, *PCI-IDE adapter card 158*]; a first disk drive including first IDE electronics, said striping controller coupled to said first IDE electronics; and a second disk drive including second IDE electronics, said striping controller coupled to said second IDE electronics [*controller on same card as disk drives 124, 126; controller 118 coupled to drives 124, 126; Fig. 1B, col. 6, lines 35-55*].

Jones discloses first and said second disk drives each having data separator electronics, data formatting electronics and head positioning electronics [col.14, lines 30-55]; said striping controller causing data being transmitted between said interface and said system bus and said first and second drives to be substantially read or written in parallel [col.16, lines 32-35].

It would have been obvious to one of ordinary skill in the art, having the teachings of Thompson and Jones and Klein before him at the time the invention was made, to modify the system taught by Klein to include a striping controller causing data being communicated between a system bus and a first and a second drives to be substantially read or written in parallel and an interface connected to the system bus and receiving requests from the BIOS via said system bus because it would have provided faster controller operation by (1) reducing the number of queued commands that must be serviced by the array controller during disk drive operation [col. 3, lines 6-8, 24-25] as taught by Thompson and (2) increased information transfer speed by allowing parallel read/writes by the disk drives [col. 6, lines 7-9] as taught by Jones.

As per claims 21 and 30, Thompson discloses data being transmitted between the system bus and the first and second disk drives is subdivided into a plurality of sequential blocks [col. 1, lines 43-54].

As per claim 26, Thompson discloses receiving an IDE request at a striping controller [col. 7, lines 4-25].

7. Claims 20, 22, 29, 31, 34 and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Klein (US6,567,864) and Jones et al. (US5,619,723) and Thompson et al (US6,341,342) and further in view of Anderson (US5,905,910).

As per claims 20, 22, 29, 31, 34 and 36, the combination of Thompson and Jones and Klein teach the claimed invention as detailed above in the previous paragraphs. However, neither Thompson nor Jones nor Klein specifically teach interleaving data so that even sectors are accessed on the first disk drive and odd sectors are accessed on the second disk drive; and the first disk drive is accessed for every other block of data and the second disk drive is accessed for the remaining blocks; and a control logic receives a system request intended for a single physical drive from the system bus as recited in the claims.

Anderson teaches interleaving data so that even sectors are accessed on the first disk drive and odd sectors are accessed on the second disk drive [col.4, lines 16-30]; the first disk drive is accessed for every other block of data and the second disk drive is accessed for the remaining blocks [col.11, lines 35-50; col.12, lines 3-23]; a

control logic receives a system request intended for a single physical drive from the system bus [Col.7, lines 60-63].

It would have been obvious to one of ordinary skill in the art, having the teachings of Thompson and Jones and Klein and Anderson before him at the time the invention was made, to modify the system taught by Thompson and Jones and Klein to include interleaving data so that even sectors are accessed on the first disk drive and odd sectors are accessed on the second disk drive; and the first disk drive is accessed for every other block of data and the second disk drive is accessed for the remaining blocks; and a control logic receives a system request intended for a single physical drive from the system bus because it would have reduced disk access time and increased the efficiency of the system by allowing both disk drives to respond to commands that overlap in time [col. 12, lines 20-23] as taught by Anderson.

8. Claims 23, 24, 32 and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Klein (US6,567,864) and Jones et al. (US5,619,723) and Thompson et al (US6,341,342) and further in view of Jenkins (US4,047,157).

As per claims 23, 24, 32 and 33, the combination of Thompson and Jones and Klein teach the claimed invention as detailed above in the previous paragraphs. However, neither Thompson nor Jones nor Klein specifically teach that the system request includes a sector bit string, a head bit string, a track bit string and a driver bit;

and mapping bits of the system request to a first system request data structure to be supplied to the first disk drive and a second system request data structure to be supplied to the second disk drive as recited in the claims.

Jenkins teaches a controller for use in a data processing system wherein in the track/sector register 146 Track Address and Sector Address bit positions identify, respectively, the track and sector on a disk to be involved in a transfer; in a fixed-head unit, the Track Address bits identify a specific head [col. 20, lines 38-42]; a Write signal, produced in response to the function bits, enables drivers 297 to load data onto the data set 101 [col. 26, lines 26-28]; and mapping bits of the system request to a first system request data structure to be supplied to the first disk drive and a second system request data structure to be supplied to the second disk drive [col. 20, lines 38-65].

It would have been obvious to one of ordinary skill in the art, having the teachings of Thompson and Jones and Klein and Jenkins before him at the time the invention was made, to modify the system taught by Thompson and Jones and Klein to include sector bit string, head bit string, track bit string and driver bit in the system request and mapping bits of the system request to a first system request data structure to be supplied to the first disk drive and a second system request data structure to be supplied to the second disk drive because it would have improved processing speeds and memory access times by providing the system identification information for the physical location on the drive from which the data file will be read or written [col. 2, lines 28-30] as taught by Jenkins.

9. Claim 37 is rejected under 35 U.S.C. 103(a) as being unpatentable over Klein (US6,567,864) and Jones et al. (US5,619,723) and further in view of Thompson et al (US6,341,342) and Mizuno et al (US5,608,891).

As per claim 37, the combination of Klein and Thompson and Jones teach the claimed invention as detailed above in the previous paragraphs. However, neither Thompson nor Jones nor Klein specifically teach a first FIFO memory coupled to an XOR gate and driven by a signal from the XOR gate to access a first storage device and a second FIFO memory coupled to an XOR gate and driven by a signal from the XOR gate to access a second storage device as recited in the claims.

Mizuno discloses a first FIFO memory coupled to an XOR gate and driven by a signal from the XOR gate to access a first storage device and a second FIFO memory coupled to an XOR gate and driven by a signal from the XOR gate to access a second storage device [col. 17, lines 8-28].

It would have been obvious to one of ordinary skill in the art, having the teachings of Thompson and Jones and Klein and Mizuno before him at the time the invention was made, to modify the system taught by Thompson and Jones and Klein to include a first FIFO memory coupled to an XOR gate and driven by a signal from the XOR gate to access a first storage device and a second FIFO memory coupled to an XOR gate and driven by a signal from the XOR gate to access a second storage device because it would have improved system performance by reducing the time required for temporarily storing write data in memory and then exclusive Oring the data to find redundant data [col. 18, lines 46-53] as taught by Mizuno.

Response to Arguments

10. Applicant's arguments filed November 28, 2003 have been fully considered but they are not persuasive.

Paragraph 4 of the declaration must clearly explain which facts or data applicant is relying on to show completion of his or her invention prior to the particular date in order to overcome the rejection under the Thompson et al (US 6,341,342) and Klein (US6,567,864) references.

Conclusion

11. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Pierre M. Vital whose telephone number is (703) 306-5839. The examiner can normally be reached on Mon-Fri, 8:30 am - 6:00 pm, alternate Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mano Padmanabhan can be reached on (703) 306-2903. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-9000.

*Mano Padmanabhan
1/9/04*

AMM
Pierre M. Vital
Art Unit 2188
January 8, 2004

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TC2100*